

A Comprehensive Floristic Study of Bhopal District with Special Reference to Family Acanthaceae

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Abstract-Bhopal is known as the City of lakes. It has some hilly tracks covered with luxuriant vegetation along with fertile plateau suitable for cultivation of a number of crops. Apart from this, the forest area is represented by mixed deciduous forest. Taxonomical investigation were undertaken to explore the floristic status of the family Acanthaceae growing throughout the Bhopal district. The family is one of the advanced and specialized families with most of the plants, herbaceous. A number of plant species also have significant medicinal value.

Keywords-Comprehensive; Floristic; Acanthaceae; Bhopal

I. INTRODUCTION

Bhopal is the capital city and the nerve centre of Madhya Pradesh. It is a fast developing city, rich in natural beauty. It is situated on the edges of two big lakes. It has a pleasant, moderate climate and quite less fluctuations in temperature. The climate is usually dry except in the monsoon season, indicating a seasonal rhythm of the weather. The awareness about the floristic composition is required for understanding the ecosystem of Bhopal geographical region. This necessitates a work in the taxonomic field to assess and evaluate the floristic composition of this region. Taxonomic investigations have been done to explore the floristic status of the family Acanthaceae, which is one of the advanced and specialized families with majority of the herbaceous plants. A number of plant species have significant medicinal value. This paper presents 9 species belonging to 7 genera of family Acanthaceae which are reported for the first time from Bhopal. It serves as a contribution to those published in flora of Bhopal by Oommachan (1977) and Khan & Malhotra (2002).

II. MATERIALS AND METHODS

TABLE-1 COMPREHENSIVE LIST OF PLANT SPECIES BELONGING TO FAMILY ACANTHACEAE.

S.No.	Plant species	Reported by
1.	<i>Adhatoda vasica</i> Nees.	(O)
2.	<i>Andrographis echinoides</i> Nees.	(O)
3.	<i>Andrographis paniculata</i> Nees.	(O)
4.	<i>Asystasia gangetica</i> T. Anders.	(KM)
5.	<i>Barleria cristata</i> L.	(O)
6.	<i>Barleria prionitis</i> L.	(O)
7.	<i>Barleria lupulina</i> Lindl.	(N)
8.	<i>Blepharis asperima</i> Nees.	(O)
9.	<i>Blepharis maderaspatensis</i>	(O)
10.	<i>Blepharis molluginifolia</i> Pers.	(O)
11.	<i>Carvia callosa</i> (Nees.) Bremek	(O)
12.	<i>Crossandra infundibuliformis</i> (L.)	(O)
13.	<i>Dipteracanthus patulus</i> (Jacq.) Nees.	(O)
14.	<i>Dipteracanthus prostratus</i> (Poir.) Nees.	(N)
15.	<i>Ecbolium ligustrinum</i>	(N)
16.	<i>Eranthemum roseum</i> (Vahl.) R. Br.	(N)

17.	<i>Elytraria acaulis</i> (L. f.) Lindaw	(KM)
18.	<i>Fittonia argyryneura</i>	(KM)
19.	<i>Haplanthus verticillatus</i> Nees.	(KM)
20.	<i>Hemidaphnis polyspermus</i>	(O)
21.	<i>Hemigraphis latebrosa</i> Nees.	(N)
22.	<i>Hygrophila auriculata</i>	(O)
23.	<i>Hygrophila serpyllum</i>	(O)
24.	<i>Justicia diffusa</i> Willd.	(O)
25.	<i>Justicia gendarussa</i> L.	(O)
26.	<i>Justicia quinqueangularis</i>	(O)
27.	<i>Justicia simplex</i>	(O)
28.	<i>Justicia betonica</i> L.	(N)
29.	<i>Justicia glauca</i> Rottler	(N)
30.	<i>Justicia procumbans</i> L.	(N)
31.	<i>Lepidagathis cristata</i> Willd.	(O)
32.	<i>Lepidagathis trinervis</i> Nees.	(O)
33.	<i>Pachystachya lutea</i> Ness.	(O)
34.	<i>Petalidium barlerioides</i> Nees.	(N)
35.	<i>Pristrophe bicalyculata</i> Nees.	(O)
36.	<i>Rhinacanthus</i> sp.	(O)
37.	<i>Ruellia indica</i> L.	(O)
38.	<i>Ruellia tuberosa</i>	(O)
39.	<i>Rungia elegans</i> Dalz. & Gibs.	(O)
40.	<i>Rungia pectinata</i> Nees.	(O)
41.	<i>Rungia repens</i>	(O)
42.	<i>Sanchezia nobilis</i> Hook. f.	(KM)
43.	<i>Strobilanthes dyerianus</i> Mast.	(KM)

O-Oommachan, KM-Khan and Malhotra, N-New

During the present study, Bhopal and its surroundings were visited for one year with a regular interval of 15 days. Most of the plant species were collected in rainy season. Vegetation of rainy season presented maximum luxuriant growth of herbaceous flora. The plant species were collected and identified as per the protocol followed in the 'Flora of Madhya Pradesh' (1993-2001) and 'Flora of Upper Gangetic plain' (Duthie: 1903-29). A list collecting plant species has been prepared along with its botanical name and medicinal value.

TABLE 2- LIST OF PLANT SPECIES BELONGING TO FAMILY ACANTHACEAE REPORTED FOR THE FIRST TIME FROM BHOPAL DISTRICT.

S.No.	Plant species	Medicinal uses
1.	<i>Barleria lupulina</i> Lindl.	Traditional and therapeutic use is anti-inflammatory for insect bites, herpes simplex use by its fresh leaves, and roots for anti-inflammatory, centipede bites. Traditional and therapeutic use is anti inflammatory for insect bites, herpes simplex use by its fresh leaves, and roots for anti-inflammatory centipede bites.

2.	<i>Dipteracanthus prostratus</i> (Poir.) Nees.	Believed to be anticancerous against the epidermis of the nasopharynx region and slightly hypoglycemic.
3.	<i>Ecbolium ligustrinum</i>	Decoction of leaves is given for fever. Roots are used in rheumatism.
4.	<i>Eranthemum roseum</i> (Vahl.) R. Br.	A root infusion is in hyperacidity.
5.	<i>Hemigraphis latebrosa</i> Nees.	-----
6.	<i>Justicia betonica</i> L.	Antidotes (venomous stings, bites, etc.); diarrhoea, dysentery; dropsy, swellings, oedema, gout; generally healing.
7.	<i>Justicia glauca</i> Rottler	-----
8.	<i>Justicia procumbans</i> L.	The juice of leaves is squeezed in the eyes in case of ophthalmia.
9.	<i>Petalidium barlerioides</i> Nees.	-----

The present check list has shown that the flora of Bhopal has included 9 new species of Acanthaceae family (Table-2), i.e. increase in earlier records.



Ecbolium ligustrinum



***Barlaria lupulina* Lindl.**



***Eranthemum roseum* (Vahl.) R. Br.**



***Dipteracanthus prostratus* (Poir.)
Nees.**



***Hemigraphis latebrosa* Nees.**

*Justicia betonica* L.*Justicia glauca* Rottler*Justicia procumbans* L.*Petalidium barlerioides* Nees.

III. RESULT AND DISCUSSION

In present study, a total of 43 plant species belonging to 27 genera of the family Acanthaceae have been recorded from Bhopal. Out of these, 9 species belonging to 7 genera have been reported for first time in Bhopal district. Most of the species are wild namely *Andrographis echinoides* Nees., *A. paniculata* Nees., *Blepharis asperim* Nees., *B. maderaspatensis*, *B. molluginifolia* Pers., *Dipteracanthus patulus* (Jacq.) Nees., *D. prostratus* (Poir.) Nees., *Haplanthus verticillatus* Nees., *Hemigraphis latebrosa* Nees., *Hygrophila auriculata*, *H. serpyllum*, *Justicia diffusa* Willd., *J. quinqueangularis*, *J. simplex* D Don., *J. glauca* Rottler, *J. procumbans* L., *Lepidagathis cristata* Willd., *Pristrophe bicalyculata* Nees., *Rungia elegans* Dalz. & Gibs., *R. pectinata* Nees., *R. repens* Nees., Some of the species are cultivated for medicinal use; these are *Adhatoda vasica* Nees., *Andrographis paniculata* Nees., *Eranthemum roseum* (Vahl.) R. Br., *Rhinacanthus* sp. A few are planted in garden as ornamentals, eg. *Asystasia gangetica* T. Anders., *Carvia callosa* (Nees.) Bremek, *Crossandra infundibuliformis* (L.), *Ecbolium ligustrinum*, *Justicia gendarussa* L., *J. betonica* L., *Pachystachya lutea* Nees.

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